

REMARKS

Claims 1, 5, 10, 14 and 18 are amended. No claims are cancelled or added.

Hence, Claims 1-21 are pending in the Application.

I. ISSUES RELATING TO 35 U.S.C. 101

Claims 10-13 are rejected for being allegedly directed to non-statutory subject matter. The Office Action states that “the claim recites ‘a computer-readable medium’.” However, each of Claims 10-13 recites “computer-readable **storage** medium” (emphasis added). It appears that the Office Action has not examined the claims in its present form. Clarification is respectfully requested. Reconsideration and removal of the rejection is respectfully requested.

II. ALLOWABILITY OF CLAIM 6

Applicant appreciates the indicated allowability of Claim 6.

III. ISSUES RELATING TO 35 U.S.C. 102(e) —*CAIN*

Claims 1-5, and 7-21 are rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Cain et al., U.S. Pub. No. 2003/0202468 (hereinafter *Cain*). The rejection is respectfully traversed.

Claim 1

Claim 1 is directed to a computer-implemented method of discovering a network path that satisfies a quality of service (QoS) requirement, and recites:

receiving, at a first router, a first data packet that indicates a destination and said QoS requirement;
updating said first data packet to indicate an identity of said first router;
determining whether a least-delay path from said first router to said destination satisfies said QoS requirement;
determining whether said first data packet has visited any router in said least-delay path other than said first router;

wherein a first set of routers that are on said least-delay path is in a pheromone table on the first router, and wherein a second set of routers that have been visited by said first data packet is indicated in said first data packet;

if said least-delay path satisfies said QoS requirement and said first data packet has not visited any router in said least-delay path other than said first router, then sending said first data packet to a second router in said least-delay path; and

receiving, at said first router, a second data packet that indicates a path taken by said first data packet to said destination. (Emphasis added)

Claim 1 recites determining whether a least-delay path from said first router to said destination satisfies said QoS requirement. Claim 1 also recites **determining whether said first data packet has visited any router in said least-delay path other than said first router**. Claim 1 further recites “**wherein a first set of routers that are on said least-delay path is in a pheromone table on the first router, and wherein a second set of routers that have been visited by said first data packet is indicated in said first data packet.**” At least these features are not disclosed in *Cain*.

Cain pertains to a mobile ad-hoc network in which a source node can explore a number of routes that lead to a destination node and select a path that scores the best in QoS ranking. Notably, in such a network, each node does not store path data, but only forms ad-hoc paths through frequent route exploration, since the network configuration is dynamically changing due to, for example, the relative mobility of the nodes. Each node reaches its neighbors by its signal transmission strength. Thus, according to *Cain*, a node cannot determine whether a path exists, but can only keep sending the route request based on its own link or node metric (see, e.g., *Cain* paragraph 0044 lines 4-7). If a route request reaches the destination, the destination will send back a route reply. The source node may receive multiple route replies indicating multiple routes. Subsequently, the source node may select a route that ranks best among the routes and send a confirmation.

The Office Action argues that, in *Cain*, “the intermediate nodes determine a least-delay path by determining whether the node can support the requested QoS parameter and denied or forward the QoS route request based on the determination. If the QoS route request is forwarded to the destination, a least-delay path is determined.”

Respectfully, this is a mischaracterization of the *Cain* reference. Claim 1 recites determining whether a least-delay **path** from the first router to the destination satisfies the QoS requirement. On the other hand, an intermediate node in *Cain* does not have or create path information. The QoS parameters referred to by the Office Action, as disclosed by *Cain* in TABLE 1 of the reference, comprise **Link** or **Node** Metrics. There is simply no path information. In fact, contrary to the argument of the Office Action, a Link or Node Metric determination of *Cain* may preclude a selection of a least-delay path, since it is possible that an overall delay on a first path is smaller than that on a second path even if a Link or Node Metric on the first path indicates a significant delay involving a particular node or link.

Claim 1 recites a determining step of a least-delay path, and also recites a determining step of whether the data packet has visited any node on the determined least-delayed path. On the other hand, since *Cain* at most performs a determination of Link or Node Metrics of the router, and since such a determination of *Cain* does not use a least-delay path from the router to the destination, *Cain* does not and cannot disclose a determining step of whether the data packet has visited any node on the determined least-delayed path by an intermediate router. Indeed, the Office Action simply fails to address these limitations in its response to Applicant’s previous arguments.

In addition to the two determining steps, Claim 1 further recites “**wherein a first set of routers that are on said least-delay path is in a pheromone table on the first**

router, and wherein a second set of routers that have been visited by said first data packet is indicated in said first data packet.” Clearly, *Cain* neither has a need for, nor discloses, these recited features of Claim 1.

For the reasons given above, Claim 1 is patentable over *Cain*. Reconsideration is respectfully requested.

Claims 5, 7, 10, 14, and 18

Claims 5, 7, 10, 14, and 18 each recite similar features as those discussed above with respect to Claim 1. Therefore, Claims 5, 7, 10, 14, and 18 are patentable for at least the same reasons discussed above as to Claim 1. Reconsideration is respectfully requested.

Claims 2-4, 8, 9, 11-12, 15-17, and 19-21

Claims 2-4, 8, 9, 11-12, 15-17, and 19-21 are dependent upon and thus include each and every feature of Claim 1, 5, 7, 10, 14, or 18 discussed above. Therefore, it is respectfully submitted that Claims 2-4, 8, 9, 11-12, 15-17, and 19-21 are allowable for at least the reasons given above with respect to Claim 1, 5, 7, 10, 14, or 18.

Reconsideration is respectfully requested.

IV. CONCLUSION

For the reasons set forth above, Applicant respectfully submits that all pending claims are patentable over the art of record, including the art cited but not applied. Accordingly, allowance of all claims is hereby respectfully solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Respectfully submitted,

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